THE VETERINARY RECORD

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The Veterinary Report for 1901.

The report of the Veterinary Department of the Board of Agriculture for 1901 has made its appearance, and is still of some interest although its facts have been discussed and forgotten for months. The title of the report is a curious one—"Annual Reports and Proceedings under the Diseases of Animals Acts, the Markets and Fairs (weighing of Cattle) Acts, etc., etc., for the year 1901." Why this cumbrous title? Why not "Report of the Veterinary Department" as it was for 20 years or more. The weighing of cattle just occupies half a page of the 82 pages forming the report.

Suppose a railway company issued an annual report under the title "Engineering Report" and a new general manager came on the scene who altered the departments and mixed up the reports so that the engineer should be forced into a back seat. Suppose the next report was entitled "Reports of the proceedings relating to the building and maintenance of engines and rolling stock, repairs of halters, etc., etc., Would the engineer be annoyed? Such a thing could not happen in the commercial world. It is only in a Government Department that two things so disconnected and so disproportionate could be grouped together and issued to the public. Mr. Walter Long certainly said he had restored "The Veterinary Department"—then why not "The Veterinary Report."

The report is all about diseases of animals, but it is written by two men—one a veterinary surgeon, the other a so-called Assistant Secretary, Animals Division. One is an expert and the other a layman. The Assistant Secretary contributes ten pages on Foot-and-Mouth Disease, Swine Fever, Rabies, Anthrax, and Sheep-scab. We wonder what would be said if a lay clerk in, say the Local Government Board, wrote critical and advisory articles on Typhoid Fever and Small-pox? We have an impression that neither the public nor the medical profession would see the joke. Of course there are plenty of laymen in the L.G B. and in the Board of Agriculture who would, if allowed, contribute pages on anything—from war tactics to boiling potatoes.

The Chief Veterinary Officer opens his report with some paragraphs relating to the organisation of his department. It consists of a chief and an assistant veterinary officer, and a dozen veterinary inspectors who are paid less than the travelling inspectors and may be dismissed at a month's notice. The report says—"The advantages derived from the increase of the veterinary staff have been very considerable." We can quite believe it, but is it not a shame that the British Government should use experts rendering indispensable services as monthly servants who have neither security of tenure nor claim for compensation or pension when their work is done.

Swine-fever in 1901 showed a considerable increase over the previous year—there being 1000 more outbreaks and nine more counties affected. It is quite a pleasant surprise to find the C.V.O. correcting the errors held and spread by his superiors. Says Mr. Cope "It is somewhat unsatisfactory to find that an impression still exists that swine-fever may be produced by a variety of causes other than the introduction of the specific organism into the system of the pig." . . . . It must be obvious to all who are interested in this subject that if there be any foundation for such notions it would be futile to attempt to eradicate swine-fever.

After referring to the theories that swine-fever might arise from the typhoid of man, from foreign food stuffs or from the swill and refuse of hotels, the C.V.O. continues—"As it is more than probable that those who have propounded these theories are unacquainted with the results of the experiments which were carried out by the Scientific Committee appointed by the Board of Agriculture to enquire into the etiology, pathology and morbid anatomy of swine-fever, the present may be a fitting opportunity for drawing attention to the statements made in the Report of that Committee—"there is no room for the slightest doubt that the sole cause of swine-fever is the introduction into the animal system of the specific organism derived from a previous case of the disease." We cannot help thinking what an instructive course of reading this Report would afford the Rt. Hon. — Hanbury.

Foot-and-Mouth Disease naturally occupies a good deal of space in the report, as outbreaks occurred in Suffolk, Essex, and Kent. It must be acknowledged that the Board controlled and finally stamped out these outbreaks with great success. We all remember how the agriculturist groaned and howled at the necessary restrictions. Mr. Cope concludes that the success of their later measures was due to the rigorous manner of dealing with an outbreak, especially stopping all movement of stock over widely extended areas. He confesses also that there is no doubt that "the failure of measures formerly adopted was largely due to the fact that the restrictions were applied over for too limited an area, the result being that the restrictions, so to speak, followed in the wake of the disease."

This is rather an important statement and we prophesy will one day be repeated by some successor of Mr. Cope's, not about foot-and-mouth but in reference to swine-fever.

On glanders the Chief Veterinary Officer speaks out plainly. He acknowledges the increase of the disease and says "It is quite certain that the law as it at present stands in the country will require to be amended before any reduction will be made in the disease," and he suggests a system "by which all diseased horses were killed forthwith . . . . . and those which reacted to mallein were prevented from coming into contact with healthy horses" or better still "a more effectual mode of procedure would be to slaughter all reacting as well as diseased horses." Rabies in 1901 was non-existent in Scotland and England, but one case in a dog occurred in Wales, and one case—probably more—was detected in a cow. Although rabies cannot yet be positively said to be stamped out, it is so confined to one area that we rest certain the time of its survival is short. The price of the report is 8½d. Every V.S. should obtain and read it.

CASES AND ARTICLES.

ARE "BOTS" EVER FATAL?

The question of the pathological significance of bots is one that, to my mind, has not been satisfactorily disposed of. Whereas the "practical" man who brings little scientific knowledge to aid him in his enquiries, finds often in his post-mortems a verdict of died from bots (especially is this the case in South Africa where every animal that ails anything is said to be either suffering from bots or tulip poisoning). Those whose knowledge is of the "bookish theoric" order assert that apart from some congestion and thickening of the mucosa at the point of attachment the presence of bots cause little or no inconvenience; Bracy Clark indeed going so far as to say that the irritation of the gastric mucous membrane that they set up exercises a salutory influence on the economy.

The accompanying photograph was taken of the stomach and duodenum of a horse that died from acute colic. A mass of bots detached from the stomach had completely plugged the duodenum, giving rise to enteritis and peritonitis.

I have not been able to find reference to a similar case.

ONLOOKER.

HORSE AND MULE EXERCISING.

We are indebted to Colonel Nunn for the photo and account of a "Horse and Mule Exercising Machine."

"Although not a professional invention, the idea occurred to me first when sent last year during the hot weather to Kaenal to look after the Depôt there, especially 200 mules isolated under suspicion of suffering from epizootic lymphangitis. These animals had been tied up separately for over three months, which did not sound altogether right, but as there was no means by which they could be exercised it could not be helped, saddles, bridles, and harness being out of the question, besides the staff it would require.

I began to think out some plan, and before three weeks (after many failures) I arrived at the machine I now send you a photo of. It worked very well and two men were able to exercise every mule for three-quarters of an hour daily, and it was wonderful how they improved in condition and general appearance. Each mule had an unbreakable head collar to himself which cost only eight annas.

We put up two machines in that Depôt before I left, and the whole thing was done at small expense and made in the Depôt work shops. When I came here to my own depôt I slightly improved the original idea so as to work broken and unbroken mules and remounts, and it is now doing most satisfactorily and is to be seen at work daily. It has been seen at work by the Commander-in-Chief, I.G. Cavalry, and other visiting officers, who have been kind enough to congratulate me on it. As it has now been at work for over four months and we have not had a single accident, I thought it might interest you and it may possibly be useful in South Africa in the Remount Depôts and Cavalry and Artillery Barracks at home. I am protecting it with a view to taking out a patent later on, but of course Government can claim it if it is of any use to them.

The whole thing is perfectly simple, and 20 horses go as well the first time put in as they do after being at it for a week.

The circle is 90 yards round, so that there is hardly more strain on the horses' legs than there is in the ordinary school. Trotting and fast walking are the paces adopted here. I can get several more photos from where this one came so will be very pleased if you will accept it, the little ones were taken by our Station Staff Officer.

F. D. HUNT.

Remount Depot,
Ahmednagar.

ROARING.

PATHOGENESIS OF HEMIPLEGIA LARYNGIS.

(Concluded from page 84.)

Paralysis of the Constrictors.—In human medicine, idiopathic paralysis of the constrictors is termed functional paralysis, whose origin must be sought in the brain. Lemon, on the point, says he has never seen a preparation showing atrophy and degeneration of the constrictors alone without great changes in the dilators, but that on the other hand cases are frequent in which the posterior crico-arytenoid is atrophied alone from the first. Schuitzler and Solis Cohen corroborate. The only symptom indicating the existence of this paralysis is hoarseness and aphonia. In the horse we should expect a characteristic cough from a glottis dilated in this manner. Contrary to Lemon's experience in man, in the case of the horse we see atrophy of the constrictors more pronounced than that of the dilators, or they exist together as is shown in many specimens. In such cases respiration is little interfered with. Such hemiparesis too in the horse is purely peripheral without any central lesion, from paralysis connected with the posterior crico-arytenoid, without producing any change in the voice. Lemon quotes a case whose left vocal cord was affected by a paralysis of the recurrent due to syphilis. In spite of the rigidity of the cord the voice was normal. In a three-year-old stallion affected with hoarseness without roaring there was atrophy of the left half of the arytenoid muscle of the crico-arytenoid left side, and thyro-arytenoid inferior, this having almost completely disappeared. The superior was atrophied, the arytenoideus very degenerate. The posterior crico-arytenoid normal, the dilatation of the larynx during inspiration nearly normal, hence one can understand why there was no roaring. The constrictors of the right were normal.

In young stallions used for stud as well as in those not so used, and in cryptorchids there is frequently noticed in the act of neighing a change in the voice, but careful examination shows that this has nothing to do with roaring. At other times one notices a slight roar which steadily if slowly increases in intensity. Contrary to what is observed in man, roaring in the horse has no central origin, even in cases of paralysis limited to the constrictors. The lesion is always unilateral and paralysis of the posterior crico-arytenoid produces sooner or later an interference purely inspiratory. One is bound to admit then that this affection in the horse depends upon the same peripheral causes as ordinary paralysis of the recurrent in which the posterior crico-arytenoid is atrophied at first, or with other muscles at the same time.

Lesions of roaring, nervous, central and peripheral.—Our knowledge of the nervous changes connected with roaring leaves much to be desired. Most authors are contented with hypothesis, more or less guess work. No one has made a microscopic examination of the nervous system. In 1834 Günther believed that 96 per cent. of cases of roaring depended on a loss or insufficiency of tension of a vocal cord due to atrophy of the dilators of the glottis. The paralysis of this muscle is without doubt due to lesions of their motor nerve (the recurrent).

According to Günther this paralysis appears suddenly or little by little, it may be complete (paralysis) or incomplete (paresis). An interruption of the motor current is then, according to Günther, the cause of the functional disorders of the dilators of the larynx. This doctrine has held its own but does not throw much light on the nature of the disease. The first question to decide is to find out whether the lesion which is always found upon the left side of the larynx has anything to do with the ordinary disposition of the recurrent nerve. On these lines various investigators have endeavoured to clear up the pathology of the disease, their observations being merely macroscopic.

Vaerst, 1888, thought the situation of the lesion upon the left was dependent on the course of the recurrent within the thoracic cavity, and the difference in the course of the two nerves. The left recurrent, says he, divides from the vagus at the base of the heart, then covered by the pleura passes over the left side of the bend of the aorta above the arterial channel formed by the union of the pulmonary artery with the posterior aorta, turning round the bend of the aorta from left to right, from behind forward. Thus surrounded by the mass of the posterior mediastinal glands it goes forward for 5 c.m. between the aorta and trachea suspended by the pericardial and endothoracic fibrous fascia. On the left face of the trachea this fibrous fold divides into two parts which join, on left and right, the pericardial fibres, between the right fold and the trachea lies the nerve which as it proceeds gradually approaches the front of the trachea and is folded between that organ and the brachio-cephalic artery. At the entrance to the chest where the œsophagus lies to the left of the trachea, the recurrent runs below the sympathetic vagus and carotid on the left of the trachea, eventually coming in front of the carotid. In the upper third of the neck it lies in the channel formed by the œsophagus and trachea to within two or three c.m. of the posterior inferior margin of the cricoid cartilage, thence it winds outward and forward through the crico-pharyngeal and posterior crico-arytenoid muscles dividing at last between the lateral crico-arytenoideus and the arytenoideus. Consequently, owing to these anatomical relations inflammation of the pleura which covers the left recurrent may be communicated to the nerve. Vaerst believes the affection is nervous, and its origin is peripheral not central, that the inflammatory process of pleurisy induces in the nerve within the cavity of the thorax a neuritis,

in which neuralemma and neuroglia are alike involved and which determines a loss of conductability. Because of the thickening of the pleura the nerve contracts adhesions and sets up scar contraction. Peripheral nerve diseases are marked by the rapidity with which the muscles they serve are affected. The group of posterior mediastinal glands situated behind the bend of the aorta and which receive the lymphatics of the œsophagus, pericardium, mediastinum, and diaphragm may be also affected, and by their increase in size exert pressure upon the recurrent. The pressure which the aorta exerts in consequence of its relations with the nerve are of importance too. Sussdorf admits that the nerve is somewhat compressed between the aorta and trachea. When one reflects that first of all the left recurrent winds round the aorta, and that it is found between the aorta and trachea, and that at this point the course of the blood is most strong, the nerve must be squeezed between the aorta, and the inflexible rings of the trachea. Moreover the nerve is suspended in fibrous folds which are subjected to agitation by the movements of the heart and traction by weight of that organ so that morbid states, hydro-pericarditis, hypertrophy of the heart, total or partial etc., all increase a possible compression. These arguments apply in great part also to the right recurrent.

At the lower extremity of the neck and entrance to the thorax the act of swallowing doubtless affects the nerve, and the left recurrent is about one third longer than the right. The author has verified the anatomical data of Vaerst; the latter, however, does not definitely account for the nature of the disease, he says, "In spite of my efforts I have found it impossible in the anatomical study of roaring to bottom the pathogenesis of the disease or to found an exact theory of its cause. Nerve lesions are not always visible to the naked eye, and must be searched for more minutely in order to dispel the doubt which envelopes the subject."

Martin has tried to explain in the following manner the frequency of paralysis in the left recurrent—"I have found that according to Froriep (*Archiv. fur Anat.*), 1885, the vagus arises from several nerves of the visceral segmental arches, then by means of their root uniting fibres from the medulla oblongata with original fibres of the dorsal and ventral spinal nerves. Froriep has isolated these nerves and traced them to the fourth and fifth visceral arches. The intestinal branch, like the trunk of the vagus, descends from the œsophageal arch into the thorax bending the nerve from the fifth arch toward the median line, so accounting for the disparity in length of the two nerves and the turn round the aorta. The frequency of roaring in long necked thoroughbreds is in harmony with this embryological fact. The length of the neck, the high vascular development, and the absence of fat all aiding in a bruising of the nerve."

Wirtz in 1865, and Franck in 1870, both pointed out that the left recurrent suffered from the pulsation of the aorta.

Dieckerhoff distinguished in paralysis of the recurrent with atrophy of the laryngeal muscles a primitive or idiopathic form which appears without being preceded by any apparent disease in the horse, and a secondary form following infective pleuro-pneumonia (influenza?—*Tr.*), damage or destruction of the left recurrent, pressure of a tumour or some form of intoxication. The recurrent innervates all the arytenoid muscles of its side, and atrophy may commence in any one of these, most frequently in the posterior crico arytenoid, so it must be concluded that some part of the left recurrent, more or less large, undergoes a material change (degeneration) which affects at first a solitary fibre and spreads little by little till the whole nerve is involved. One finds atrophy of the left recurrent only in horses that have suffered from roaring for some years; one must conclude, therefore, that the disease is nervous in origin, but not central, being a motor atrophy due to long standing peripheral paralysis."

In (*Berlin. Thierärtz Woch*) 1890 Dieckerhoff expresses himself thus: "Rabe has informed me that in the autopsy of horses affected with roaring he has found for some years past a degeneration of the connective of the left recurrent, and has demonstrated it in his lectures. It will certainly be desirable that this piece of pathological anatomy should be fully described. He seems to hold the opinion which attributes the paralysis to degeneration of the connective in a small part of the nerve in its mediastinal course. The sero-fibrous exudate which is formed in pleurisy cannot alter the function of a nerve. In any case an inflammation of the pleura developing in the mediastinum would not affect the function of a nerve first."

On affections of the larynx localised on the left after contagious pleuro-pneumonia, Dieckerhoff says: "I know of cases where roaring has appeared a week after cure, but I do not know the precise nature of the malady. It is still obscure whether unilateral paralysis is one of the etiological influences of pleuro-pneumonia.

The muscular paralysis may be attributed to a toxic principle circulating in the blood, and the paralysed centre of the left recurrent determines a parenchymatous degeneration of the corresponding muscles."

Trasbot and others call in tumefaction of the glands and especially the bronchial glands to help to explain the pressure on the left recurrent.

K. Günter (*Studien über des Kehlkopfpfeifen des Pferdes*) 1896, states that he has not foundany pathological change in very recent paralysis of the recurrent. "The lesion of roaring in horses that have not been long affected consists from the first and always of atrophy of the muscles of the left side, sometimes also of the right, but always less marked. There is no sufficient reason why the left should be the one always attacked. The muscular atrophy more or less over the whole range of the recurrent, but never attacks muscles not innervated by it. One sometimes finds changes in the nerve both macro and microscopic (?) but only when the disease is old standing.

Paralysis of the recurrent commences without any appreciable change in the tissue of the nerve, the changes are apparent only when the disease has existed for some time. It is treated as a neurosis. We have no knowledge of the constitution of the

nerve or the changes which occur within it beyond suppression of function. We see paralysis and other nerve affections leave a nerve as suddenly as they appeared, or pass from one nerve to another without leaving a trace of their presence. In thousands of cases we cannot recognise any material alteration in a recently paralysed nerve so that we have to look upon the paralysis as dynamic. Paralysis may accompany or follow infective maladies or constitutional intoxication. In the great majority of cases paralysis appears suddenly in healthy horses without any preceding illness. Paralysis of the recurrent is hereditary."

Fleming (*Roaring in Horses*), 1899, says on p. 103: "In cases of long existing chronic roaring the left recurrent nerve and its filaments have become so wasted that little is left of them except the sheath; and this, even, is so attenuated that a most careful dissection is required to find it: a circumstance that has led some investigators to the conclusion that the nerve was congenitally absent. Of course this is not the case. Like the muscles this nerve undergoes after a certain time such degenerative changes as other nerves are liable to from various causes; the nerve sheath and then the axis cylinder becomes atrophied and altered, the white substance of Schwann being sometimes increased; this change is coincident with a lighter colour of the nerve, and diminution in its circumference until it is completely wasted. The implication of the nerve in the morbid changes has strangely escaped the investigation of veterinary writers until lately. For instance Williams says there are no nerve lesions in animals affected with old standing roaring."

Most writers show a lack of precise microscopical study of the nervous system, so in conjunction with Stuurmann the writer has investigated the matter, not only as regards the recurrent nerves but also the vagus, the accessory of Willes, and the medulla oblongata, in some horses the accessory owing to its likeness in form to the recurrent.

Except in cases where I have examined the whole length of the recurrent microscopically, my researches have been limited to inquiry into the peripheral portion of the nerve near the larynx in roarers. In the greater number of cases the results were sufficiently alike to warrant coming to a conclusion as to the nature of the malady. If the etiology is not clear the data bring us much nearer the solution of the problem.

Case I.—Fifteen-year-old mare which had been a roarer for two years. The day on which she was purchased and the day after, the roaring was so bad that tracheotomy was performed. The severity of the roaring gave the impression that the noise was due to a tumour or deformity of the larynx rather than to hemiphlegia; a careful examination revealed paralysis of the left side of the larynx. By means of an aperture made in the larynx it was found that there was no mobility in the left arytenoid cartilage which was fixed in the post-mortem position. After the animal had been breathing through the tracheotomy tube for some days this was closed up and the mare not only did not roar at rest but only very slightly at work, it is probable that the rest for the larynx had allowed the cartilage to be drawn slightly outwards (anyway one cannot allow that roaring is due to spasm of the right constrictor consequent on disease of the vagus as is often observed in man.

The mare was killed some days after. The left recurrent and the vagus examined throughout showed no adhesion or compression by the lymphatic glands. The nerves were hardened in Müller's fluid, also the left accessory. The bulb was hardened in formalin and then in alcohol.

The upper margin of the left arytenoid was lower and nearer the middle line than the right. The greater part of the muscles of the left of the larynx were atrophied. The posterior arytenoideus was reduced in its upper third to a shred of muscle and in the lower two-thirds was a fibrous plate. The left half of the arytenoid muscle had disappeared. The superior thyro-arytenoideus was little diminished, but the muscle fibres were very colourless. The crico-thyroid kept its colour and size.

Upon microscopic examination the medulla and spinal accessary nerve showed no change. The same could not be said of the vagus and recurrent. The vagus was normal in sections taken from the lower cervical and anterior thoracic portions, but in the upper cervical portion, the nerve fibres were completely atrophied and connective tissue had taken its place; near the larynx the nerve fibres were less and some fascettes only contained two or three. The fascettes formed of axis fibres were all affected.

Case II.—Five year old gelding had been roaring for some months after a mild attack of adenitis equina. In January arytenoidectomy was performed. The roaring ceased. In April the animal presented a difficulty in eating, some regurgitated matter got into the trachea, set up pneumonia, and the animal had to be killed.

Along the whole extent of the vagus and left recurrent there was no trace of abnormal pressure or distention of the lymphatic glands. All the recurrent and the vagus as far as the root of the jugular were dissected out and put into Müller's fluid. The larynx and the nasal cavity contained alimentary detritus. In the lungs were gangrenous foci. There were no traces of the arytenoidectomy wound, and the mucous membrane was smooth. The scar scarcely visible. The aperture of the larynx as that of a normal one, no sort of cicatricial tissue contraction. There was a marked one sided atrophy on the left. The muscles most affected the posterior crico-arytenoid and the arytenoideus, in which muscle fibres were changed to fibrous tissue. The lateral crico-arytenoideus was markedly atrophied. The superior and inferior thyro-arytenoid were normal in size but very pale in colour. Sections of the nerves showed that the recurrent had preserved its normal character throughout the thorax and halfway up the neck. Forty to forty-five c-m. from the larynx, loss of some axis fibres clearly showed the commencement of degeneration. Some fibres had undergone complete degeneration. At 5 c-m. the fibres were scantier still, only two or three together, till at the divergence of the branch to the posterior crico-thyroid, nerve elements were entirely absent. The appearance of the difficulty in swallowing led to the expectation of

important changes in the vagus, but that nerve was normal throughout.

Case III.—Fifteen-year-old mare for two years had breathed through a tracheotomy tube inserted on account of acute roaring. The mare was killed. Post-mortem there was no appearance of pressure or disturbance throughout the length of the vagus and left recurrent. These two nerves and the bulb were placed in formalin solution and hardened in Müller's fluid and alcohol. There was marked atrophy on the left of the larynx. The left arytenoid cartilage had descended and was turned inwards. Of the posterior crico-arytenoid there remained but few fibres, and those were very pale indeed. The left half of the arytenoid was reduced to a fibrous plate, of the other muscles the thyro-arytenoid was the least atrophied. Microscopical examination of the nerve showed that the vagus was normal throughout, the recurrent also within the thorax. In the lower part of the neck the degeneration varied from place to place; in the laryngeal portion the nerve elements had entirely disappeared. The proliferation of the connective tissue was sufficient to cause an apparent increase in the size of the nerve and to isolate the few remaining nerve fibres. There was no change in the medulla oblongata.

Case IV.—Nine-year-old mare, an old standing roarer. Dyspnœa so marked even at rest that neighing was completely aphonic. She was bled to death. There was no compression of the left recurrent or vagus throughout, the thoracic glands were not hypertrophied. The left laryngeal muscles were atrophied, especially the crico-arytenoid superior which was reduced to a shred of pale muscle tissue. The posterior crico-arytenoid and arytenoideus were somewhat reduced in size. The right posterior crico-arytenoideus was imperfectly developed, this may account for the severity of the roaring in spite of the comparatively slight atrophy of the left dilators. Here is a case in which the peripheral part of the recurrent was especially concerned, and no idiopathic paralysis of the constrictors and in consequence loss of voice. The most marked lesion had the respiratory disturbance. The lesion had progressed step by step so that at last posterior crico-arytenoid had participated in the paralysis. The vagus was normal and the large fibres of the recurrent in the cervical region, but the axis fibres were less in number and in part degenerate. Near the larynx all fibres were markedly degenerate, however the nerve fibres were more numerous and better preserved that in ordinary cases of roaring which harmonises with the relatively slight atrophy of the posterior crico-arytenoid and arytenoideus.

Case V.—Thirteen year old mare had roared for some months and tracheotomy had been found necessary. The tube was removed on day of purchase and there was a slight roaring after a trot of 200 metres. Beside laryngeal paralysis the mare had paralysis of the neck of the bladder with incontinence of urine. After 15 days observation the mare was killed. Nothing abnormal along the course of the vagus and left recurrent. All the muscles of the left of the larynx were atrophied except the crico-thyroid, but only slightly, the most affected were the thyro-arytenoidei superior and inferior, and these too were palest. The posterior crico-arytenoid had a normal colour and the upper half was only distinguished by size from that of the other side. This indicated a morbid process of comparatively recent origin and agreed with the data furnished by Dr. Oberbeck, V.S., of Steenwijtz.

In spite of the merely slight atrophy presented by the muscles, the recurrent was altered. It was normal as far as half way up the neck, but in the region of the larynx there was almost total degeneration. The terminal fragments of the two recurrents near their division on the larynx were subjected to special research, on the left side where there was pronounced muscular atrophy the nerve was completely degenerate. On the healthy right side the terminal part was half as long again as on the left, and normal.

When in cases of chronic roaring some muscles of the paralysed side have still some muscle fibres more or less well preserved, the nerve shows a greater number of normal fibres.

The result is that, except in palpable cases of tumours, aneurism of the aorta, etc., one must seek for the alteration of the recurrent in the peripheral portion, especially in the region of the larynx in 99% of nervous roaring. Probably this alteration does not depend on neuritis, but is simply a secondary process of degeneration. One may find indications of degeneration 30 to 40 cm. from the larynx but only very few axis fibres are involved and even further away an odd axis fibre or two may be involved. The thoracic part of the recurrent has always turned out to be normal, even in cases where the whole of the muscles of the left larynx were completely atrophied and the malady had existed for years, also where it had occurred after strangles or pneumonia. There were no nerve lesions either macro or microscopic in the part of the recurrent winding round the aorta or behind this.

In cases where muscular atrophy affected the constrictors alone and was manifest during life by aphonia (frequent in stallions) the nerve degeneration was limited to the extreme terminal of the recurrent, especially near the thyroid cartilage where the branches destined to posterior crico-arytenoid and arytenoideus divide; after a variable time the lesion extends towards the origin of the nerve. Paralysis of the posterior crico-arytenoid then becomes evident and the respiratory disturbance well marked. When the fibres of the recurrent are preserved to a greater or less degree in its peripheral part the muscles of the larynx likewise remain. It is not correct, however, to assert that the crico-arytenoideus posterior has a prevalence always. The recurrent of the paralysed side is generally suddenly and markedly diminished in its peripheral portion, but the process is accompanied by a proliferation of connective, the size of the left recurrent is scarcely then half that of the right.

The anatomical changes in the nerve are always more advanced than those of the muscles. I have constantly found this after section of the recurrent.

The fascettes (12 or 13) which compose the recurrent nerve have not the same structure, more

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than half are large fibres the rest are finer and probably in part sensory; moreover, the two halves have separate origins shown in the embryo. We are completely ignorant of the immediate cause of ordinary idiopathic laryngeal paralysis in the horse which has been shown to affect the peripheral part of the recurrent only. I have furnished some data but look for further experimental proof to confirm my theory. —*La Rtforma Vét.*

F. E. P.

POPULAR VETERINARY LECTURES.

At last the popular veterinary lecturer has reached our district, and we were surprised to observe in the advertising columns of the local papers an announcement in glaring capitals that a "Professor" hailing from the Dublin College was to lecture at various centres. There was also a paragraphic announcement describing how plain and lucid was to be the language used by the lecturer.

Some of these lectures were delivered in remote country districts, but the last, and according to advertisement the most important, was given at the Court-house, before wealthy agriculturists and well-known district councillors.

A lengthy description of the lecture was given by the local press, we presume with the sanction of the "Professor." We read that the meeting resembled a Professor and his class, the latter after the lecture catechised the professor on many points, and showed that they possessed practical knowledge of no mean order. Many and various were the topics dealt with, from the Schmidt treatment of milk fever to methods for the prevention of black-quarter by inoculation.

As a "sop" for the local practitioners we read that the "Professor" kindly suggested to his audience to call in a veterinary surgeon to show them how the directions were to be applied; we conclude from this recommendation that at the next case it would be a question of "go thou and do likewise," remembering the duty of one neighbour to another.

Many of our agricultural clients described to us these new methods in evident delight, but were surprised when we informed them that the forms of treatment mentioned were far older than the lecturer's probation period as a "professor."

Now if this philanthropic "Professor" devoted his energies to districts out of reach of professional aid, we might be inclined to excuse his zealous efforts; but to lecture in a city in the manner described is carrying the joke too far. At the present time we find it difficult enough to make both ends meet between competition, quacks, and patent medicines. Now we have another evil to face—it is thought proper to educate our clients in veterinary matters.

When these lectures were started we were told blandly that they would deal with hygiene and sanitary science, etc. As we expected, such a course would not take on, and a more attractive one has been substituted.

We believe the "Professor" is a teacher. If so, does it not seem strange that at one time of the year he should instruct students how to earn their living by their profession, and at another time teach the public how to avoid the expense of veterinary attendance? What would be thought of a teacher connected with a university, or school of medicine, who lectured to the public on the elements of medicine in a popular fashion.

But then we are forgetting that the two professions are so different; we veterinary surgeons are supposed to live on air, and omit the commercial element. We must be public benefactors and have no professional secrets.

In a district amply supplied with qualified practitioners we may well ask the necessity for a College luminary (?) appearing in our midst and lecturing in the manner we complain of. By educating the public in veterinary matters the chemist is the gainer. We know from bitter experience that the more clients know about doctoring animals, the worse for us. In places where formerly we could earn professional fees our services are dispensed with, and a medicine chest substituted.

Iodide of potassium, chloral, the Schmidt outfit for milk fever, etc., etc., are now in a large number of farmer's hands. From whom did they get their information? Certainly not from their veterinary surgeon.

We would suggest to the learned Professor to deliver his lectures in his own district and observe the effects produced. They certainly will not add to his income from practice.

E. Wallis Hoare, F.R.C.V.S.

EXTRACTS AND NOTES.

HUMAN AND BOVINE TUBERCULOSIS.

At the recent meeting of the British Medical Association on the Section of Pathology and Bacteriology, Prof. Hamilton opened a discussion upon the Relationship between Human and Bovine Tuberculosis. The question could not be said to be settled owing to the fact that experiments were still in progress. Koch and Schutz's experiments were striking in their uniformity in failing to inoculate calves with human tuberculosis, while inoculation with bovine tuberculosis was invariably successful, Having reviewed their work in some detail he referred to the fact that one of the inhalation experiments with human tuberculous sputum was successful, though they regarded it as doubtful. In the case of one pig, too, fed with human tuberculous sputum, inoculation was apparently successful in spite of the assertion by Koch and Schutz that the case was doubtful. The question largely was what constituted successful inoculation. Koch and Schutz took too extreme a view. The question of successful inoculation should be that the bacillus was multiplying in the new host, was producing tissue disturbance, however slight, and that the material from the new host was capable of producing tuberculosis in the guinea-pig. Human tubercle developed at first slowly in the cow, but could become acclimatized. Chauveau's feeding experiments, too, were in direct opposition to those of Koch and Schutz. The same was true of Arloing's recent experiments by intravenous inoculation of human tuberculous sputum into calves, sheep, goat, asses, rabbits, and guinea-pigs. The bovine and

human organisms were identical, but under different circumstances of acclimatization differed in degree but not in kind. Differences in morphological characters, or degree of pathogenicity, were not sufficient for founding a differentiation of species. The general view at present was that bovine tuberculosis was equally virulent for human beings and for animals, but the point was difficult to prove He believed that if Koch and Schutz had used tuberculous glands for their experiments they would have had very different results. Professor Delépine agreed that the grounds upon which Koch made his assertion were insufficient. It was important to remember that the effects of inoculation differed frequently in man and in various series of animals. He referred to his own positive inoculation of a calf with human tuberculosis sputum. It was also important to remember that tubercle bacilli varied in virulence in different cases, so that he in his experiments used sputa from six different sources for each inoculation. Dr. Shennan said that Koch's experiments were what might have been expected considering that inoculation of a bacillus from one animal was being made into an animal of a different species. The relation of abdominal to pulmonary tuberculosis in children was useful in attempting to arrive at an answer to the question, together with the question whether milk boiled or not, was a large article of diet or not, etc. He wished to know whether one might not have true bovine tuberculosis affecting man. Professor Northrup had investigated several thousand cases with regard to the site of primary infection. One per cent. of all cases were apparently primary in the abdominal cavity. The primary focus was in the bronchial glands, however, in the majority of cases. Hence he thought in New York danger from ingested food was very slight. Dr. Hodgson mentioned the case of a healthy cow fed upon tuberculous glands, which showed marked tuberculosis, primary in the lungs and distinctly later in the intestinal tract. He said that this might suggest that feeding experiments might lead to primary pulmonary disease. Dr. Maquire said that in feeding experiments with ruminants it was quite possible, even probable, that though the experimentor thought he was inoculating by the alimentary tract really the primary infection occurred in the lungs by way of the larynx. Professor Hamilton in his reply said that there was little doubt that inoculation in one part of the body might lead to an outbreak of tubercle at a distant part.—*Brit. Med. Journ.*

THE RELATIONS OF HUMAN TO BOVINE TUBERCULOSIS.

Ostertag deals with the question as to the identity of human and bovine tuberculosis (*Zeitsch. f. diaet. u. physik. Therap.*, No. 6, vol. v.) Glancing through the history of the pathology of bovine tuberculosis (*Perlsucht*) he finds that without any motives having been given, the consumption of meat of tuberculous cattle was already forbidden by law in the ninth century. The first reason accorded for the prohibition was that in the eighteenth century it was believed that the disease and human syphilis were identical. Gerlach was the first who showed that it was a form of tuberculosis, but this point was not actually settled until Koch discovered the tubercle bacillus in both conditions in 1882. Virchow had adopted the opinion that bovine tuberculosis was a sarcomatous growth. Last year Koch disputed the identity which he had been convinced of. Passing by the experiments of Koch and Schultz, which show that the bacilli of human tuberculosis were incapable of producing *Perlsucht*, he attacks the question by considering the wisdom of forming any conclusions in the reverse direction. As to the facts, he finds that the same experiments had been performed before by Puetz, who concluded that a carrying over of human tuberculosis to cattle under ordinary circumstances is either extremely rare or does not occur at all, and that the possibility of infection of man from bovine tuberculosis was by no means proved. Theobald Smith, Frothingham, and Dinwiddie also adopted similar views. Allowing a large amount of doubt whether there is any danger of carrying over human tuberculosis to cattle, he says that he regrets that Koch should have gone so far as to express himself that it is not necessary to avoid the ingestion of the bovine bacillus. That this has already produced much difficulty he shows by quoting some resolutions passed by various agricultural boards in reference to the inspection of meat. Koch based his opinions that tuberculous meat and milk do not produce tuberculosis in the human subject on the ground that primary intestinal tuberculosis is very rare, but it is by no means proved that just these rare cases are not produced by this means. It has been shown that under certain conditions tubercle bacilli act much more virulently than under other circumstances; for example, the diseases produced by an injection of tubercle bacilli with pyogenic cocci is more acute than that produced by tubercle bacilli alone; and that such an attenuation as is known to take place in the case of smallpox, when carried over to the calf, is not improbable in the case of tuberculosis. On the other hand, as M'Fadyean has shown, primary intestinal tuberculosis is believed by some reliable observers to be common, rather than rare. However this may be, Ostertag has found that in feeding experiments with swine, he has never seen primary intestinal tuberculosis, but always invasion of the gland of the larynx, throat, and mesentery. These animals nearly constantly develop beside the mesenteric, tuberculosis of the lungs and bronchial glands. He believes that further investigation will prove that the relation between the bacilli of human and bovine tuberculosis are akin to those between avian and mammalian tuberculosis. Supporting this view he quotes the few positive "carrying over" experiments of Kitt, Bollinger and others and the point which Baumgarten brings forward, that from the scrofulous glands of human subjects, fatal tuberculosis can be produced in the rabbit. He further considers it as proved that bovine tuberculosis can be carried over to man. In support of this, he calls attention to the cases reported by Moses, Priester and Ravenel. Objections have been raised to these cases, but they are not conclusive. Beside these cases, there are a number of severe infections which have been traced to cattle or milk. Ostertag says that the proper place to decide these and similar questions is the Commission, but that until it has been clearly proved that the two conditions are separate diseases, one has no right to relax the rules for preventing infection by milk and meat of tuberculous cattle. Still it must be recognised that Koch has done a good service by stimulating scientists to carry out so much important work. It is to be hoped that this work of investigating the question will have the desired effect of finally settling it. —*B.M.J.*

Motor Car Accident.

A serious motor-car accident occurred near Rearsby, Leicestershire, Aug. 19, whereby the Master of the Quorn Hunt. Captain Burns Hartopp, M. A. Burnaby, and the Rev. R. C. Dashwood were injured. The party were motoring from Little Dalby Hall to Quorn, when near Rearsby the car ran into a cow, with the result that the occupants were pitched out and the car was wrecked. Captain Burns Hartopp was picked up in a semi-conscious condition. Mr. Burnaby was more seriously injured, and medical aid was summoned. Mr. Dashwood escaped with a shaking.—*The Times.*

PLAGUE AS A SOIL INFECTION.*

By REGINALD FARRAR, M.D., Oxon., D.P.H. Camb.

I shall not attempt in this paper to bring forward any novel theory of plague. I propose merely to summarise evidence that is available in the report of the Indian Plague Commission and in other published documents, to the effect that outbreaks of bubonic plague are dependent on the infection with a specific microbe of soil contaminated with the excreta of rats or other animals that have suffered with the disease, and that except in pneumonic cases infection is ordinarily the result of direct inoculation from the soil, the element of personal communication being a factor of relatively small importance.

It is a significant fact that plague is endemic in certain districts, notably in the Kumaon district at the foot of the Himalayas, and in Yunnan in China. In Kumaon it has been noted that of two villages not more than five hundred yards apart, and under precisely similar conditions as to elevation, exposure, etc., one may at a given time be ravaged by a severe epidemic of plague while the other remains entirely exempt. The association of human plague with rat mortality in Kumaon is well established.

It may be confidently asserted that plague does not spread rapidly along lines of human intercourse, and, indeed, geographically speaking, does not spread rapidly at all. When we consider the appalling *intensity* of plague in India, we cannot but be struck with the fact that its *spread* is in proportion significantly slow.

The spread of plague has been strikingly compared to that of a drop of oil on paper. A devastating epidemic which decimates the population of a given town, tends nevertheless to remain limited to that town, and even to a particular quarter of it, and takes weeks or months to pass from one spot to another. This feature of plague was noted in connection with the plague of London in 1666, and also in the Black Death of the fourteenth century. In Egypt, Cairo has been known to remain unaffected while plague was raging in Alexandria, and *vice versa*, in spite of unrestricted intercourse between the two towns. In Bombay, plague remained for a considerable time limited to the Mandvi quarter in the neighbourhood of the docks, where it was first introduced, and where, indeed, it may be said to have become endemic. This "localizing tendency" of plague points strongly to theory of soil infection.

Still more significant is the fact that the policy successfully adopted in India from time immemorial in dealing with epidemics has been that of evacuation, a policy fully sanctioned by the results of the most enlightened modern administration. The verdict of the Bombay plague report is to the effect that evacuation checks a crescent epidemic, lessens mortality, and if promptly carried out in villages, tends to arrest diseases *in toto*.

It is obvious that if the disease is spread to any considerable extent by human intercourse, merely to remove a population in bulk from houses inside a town to huts or tents outside, could not wholly arrest an epidemic; for if we credit something to the effect of the freer circulation of air, we must enter on the debit side the fact of necessarily closer aggregation in the huts or tents. Yet that epidemics can be checked, or even in many cases wholly arrested by this policy, is undeniable.

In Poona the effect of health camping was found to be "almost magical." Of 6,100 people taken from the worst infected areas, only one undoubted plague case occurred after they had returned to their houses. In that instance the woman who was attacked was only six days in camp and was taken ill the evening of the day she left. Plague had been raging in the Wanowri Bazaar, and, it is worth noting, was found to be "but little modified by the removal of the sick and the segregation of contacts;" but from the date of the removal of the last family to camp not a single case arose among these people, nor did one occur among them after their return to the bazaar. On the other hand, when the bazaar people were sent to the health camp a small row of huts was overlooked and the inmates left undisturbed. Amongst these (that is, those who had been left behind in their homes) five cases, three fatal, occurred within twenty-four hours; the remainder were then segregated without delay. The object lesson proved of great value and was not forgotten by the people.

In Malegaon partial evacuation with disinfection was found unavailing to arrest the spread of plague, and orders were given for the complete evacuation of the town. After the evacuation was completed the plague ceased almost entirely. Not a single case occurred which could be proved to originate in the health camp. The one or two cases that did occur were among people convicted of stealing back to their houses. Moreover, not a single village was infected.

Striking as is the evidence for the efficacy of evacuation in checking epidemics, yet more conclusive as to soil infection is the fact that such cases of plague as do sporadically occur in health camps after evacuation has been carried out occur almost exclusively in persons who have surreptitiously visited their homes against orders.

We have, then, ample evidence that plague is an infection of locality, an infection resident in the soil; the evidence that it is conveyed by direct inoculation is not less conclusive. Captain James, I.M.S., testified that disinfecting work is "most dangerous," and that about 50 of his disinfecting gang in the Punjab contracted plague. Dangerous it certainly is for barefooted coolies, but persons protected by boots, and especially by boots and putties, seem to run very little risk.

At Daman "the disinfecting staff, though continually in infected houses and after handling plague-striken persons, did not, as long as they kept themselves booted and washed their hands, get infected by plague; on the other hand, a carpenter who cut his foot with an adze and discarded his boots, and went on opening up a disinfected house for ventilation, developed the disease, though he had no relations ill of plague and lived in a healthy part of the town." There is a large body of evidence to show that native soldiers protected by boots and putties are almost entirely exempt from the risk of contracting plague while engaged in disinfecting, but of the Shropshire Regiment employed for this work in Hong Kong and wearing boots, but not putties, but only trousers which left their ankles unprotected, several contracted the disease.

The terrible susceptibility of the people of India to plague lies in the fact that they are, generally speaking, a barefooted race. The majority of them, moreover, wear toe-rings, which usually fit very badly and give rise to chronic abrasions. They are also to a great extent a bare-skinned race, and the garments they wear are generally thin and scanty. The women use earth for scouring by hand their brass and copper vessels, and also sweep the floors of their houses with the bare hand. It is a significant fact that women suffer from axillary buboes in a far higher proportion than men. Earth is also almost universally employed by the natives for a purpose for which sanitary paper is preferred in this country.

To well-shod and well-clad Europeans plague is very little dangerous. The few cases that do occur are generally of the pneumonic type, or else the result of accidental inoculation, in the laboratory or otherwise. One of the very few English children who have died contracted the disease from the bite of a plague-striken squirrel. In

*British Medical Association, Annual meeting at Manchester, 1902. Section of Public Medicine.

Calcutta it was noticed that the Chinese residents in the worst-affected quarter of the town were exempt from the disease, and this immunity was attributed to the fact of their wearing boots.

That rats and other animals, especially rodents, are liable to suffer from plague is too well known to require proof. The fact in this connection which I desire to emphasize is that mortality among rats almost invariably *precedes* an epidemic of human plague. Although in a few cases the evidence as to rat mortality has been negative, in the great majority of epidemics there has been well marked evidence of rat infection before the disease became general among human beings, and it may be safely asserted that every large epidemic has been preceded by considerable mortality among the rats.

This connection is well understood by the natives of India, among whom plague is often termed the rat disease. The Bhagavata Purana, a religious poem of the thirteenth century, directs that "people should abandon their houses when rats fall from the roof above, jump about and die." Of the plague which devastated the Punjab from 1611 to 1618, it is said :

"No place in Hindustan was free from its ravages. Lulling at times, it continued to lay waste the country for eight years. About the same time in Kandahar the land was overrun by mice, and mice and plague seem to have had some close connection. A mouse would rush out of its hole as if mad, and striking itself against the doors and walls of the house, would die. Then the plague was in the house. If the people at once fled, they might be saved ; if they stayed, the whole village was swept away."

Of the mortality among rats in the Mandvi quarter of Bombay, Professor Müller says :

"I have never in any other part of the town seen sick, dead, and dying rats in such quantities. When asked for dead rats by Mr. Hankin, I easily collected twenty in five minutes."

And, again,

"Whenever dead rats were found in the servants' quarters—and ladies told me of them at the Yacht Club —ten days or a fortnight afterwards, almost with the regularity of clockwork, their servants would arrive at my Servants' Plague Hospital."

In the case of plague imported to new places by human agency it was noted by Lieutenant-Colonel Henderson that mortality occurred among rats after the arrival of imported cases and immediately prior to the occurrence of local cases—drawing the inference that the rats were infected by the imported cases, and that when they were infected they infected the locality, and that the infection of the locality was the means of infecting others.

Time will not allow of my adducing evidence to the effect that infection by direct personal communication is, except in pneumonic cases, very rare. It must suffice to say that ward boys, ayahs, and other attendants in plague hospitals are exempt from the disease to a remarkable degree, so much so that it has even been said that that the plague hospital is the one place in an infected town where the disease is least likely to be contracted.

The bearing of these facts on public health in England I will only briefly indicate by saying in the words of Dr. Davies, of Bristol, that "plague when it is introduced by persons may readily be exterminated ; when it is introduced by rats, followed by infection of the shore rats, it has come to stay." The Venice Convention does not even mention the word "rats." I hope I have said enough to prove that if we are to exclude plague from England we must devote our energies not merely to the exclusion of plague-smitten persons and plague-infected articles, but even more earnestly to the exclusion of rats, and as a counsel of perfection I would advocate the policy of rat-free ships.—*B.M.J.*

VETERINARY LECTURES.

Lecture by Professor Mason.

On Saturday, August 9th, Professor Mason, of the Royal Veterinary College, Dublin, concluded a series of lectures in several parts of the county Cork on abortion in cattle, and several other diseases affecting farm animals. The large Council Chamber of the Court-house, in which the final lecture was delivered on Saturday, was well filled by representative farmers from several parts of the county, who listened to Professor Mason with evident interest, and when he came to the details of his preventive and curative treatment, it was pleasant to see the number of notes being taken by a great many in the audience—in fact the whole proceedings were like a conference between professor and pupils, with the addition that, in this case, the pupils had a large share of practical everyday knowledge—a knowledge to guide them in catechising the teacher at the end of his lecture. It showed clearly the anxiety of the farmers to take advantage of every source of information open to them, and was a complete refutation of the theory so often put forward that they think they have nothing further to learn.

Mr. Howard (Chairman of the County Council) introduced Professor Mason, who gave special prominence in the early part of his lecture to the influence of dirt, bad sanitation, and badly lighted houses in propagating the germs of various diseases. He dealt then in detail with abortion in cattle, its causes, prevention, and treatment. Whenever it broke out in a herd the cow should be immediately isolated, and the animal and surroundings disinfected. For disinfecting the stall nothing could be handier or more useful than ordinary sulphate of copper, which could be distributed effectually by an ordinary potatoe spraying machine, and for disinfecting the animal he found Jeye's Fluid both effective and easily available. The lecturer then dwelt with "blackleg" or "blue-quarter," for which he advised an inoculation with "blackleg vaccine" by means of a special syringe. He noticed that "redwater" was peculiar to certain fields, and gave instances where the removal of scrub and bushes, which had formed a receptacle for the germs, completely banished the disease from the lands. Thorough drainings and salt and lime dressings were also advisable. Questioned on milk fever, the lecturer described the new German method of treating the disease, and in this and all other matters treated on, he advised the calling in of a veterinary surgeon to show how the treatment should be carried out.

At the end of the lecture, the chairman, Mr. Furlong, Mr. John Noonan, M.C.C. ; Mr. John O'Sullivan, R.D.C. ; Mr. George Logan, Mr. Wm. M'Donald, M.C.C. ; and several others questioned Professor Mason on several of the points raised in the course of his lecture, and a series of exceedingly interesting details resulted, several farmers giving personal corroboration of some of them. At the end of the discussion, Mr. C. J. Furlong, Fermoy, proposed a warm vote of thanks to Professor Mason for his highly interesting and instructive lecture, which was seconded by Mr. John Collins, M.C.C., Douglas, and the Chairman, in putting it paid a high compliment to the ability shown by the lecturer in dealing with the subject, and the lucid and effective manner in which he explained all the points raised in the discussion, and hoped that good results would follow in dealing with abortion and the other diseases in the manner described by the lecturer.

Prof. Mason, who was received with applause, while thanking them for the kind and appreciative hearing they had given him, hoped they would be pleased to have him amongst them again on some future occasion. He concluded by proposing a vote of thanks to the chairman, which was carried with acclamation, after which the meeting adjourned.—*The Cork Weekly News.*

THE DOGS REGULATION BILL.

The Bill introduced by Mr. Hanbury "to consolidate and amend certain enactments relating to dogs" provides that the Council of any county or borough may make by-laws—

(*a*) For prescribing the wearing by dogs, while in a highway or in a place of public resort, of a collar with the name and address of the owner inscribed on the collar, or on a plate or badge attached thereto. Provided that by such by-law any dogs or class of dogs may be, either absolutely or conditionally, exempted from the operation thereof; and

(*b*) With a view to the prevention of worrying of sheep, for preventing dogs or any class of dogs from straying during all or any of the hours between sunset and sunrise.

The by-laws may provide that any dog in respect of which an offence is being committed against them may be seized and treated as a stray dog. So far the Bill is permissive.

The power over stray dogs given to the police by this Bill is limited by no local option. It is enacted that "where a police officer has reason to believe that any dog found in a highway or place of public resort is a stray dog, he may seize the dog, and may detain it until the owner has claimed it and paid all expenses incurred by reason of its detention." The next section provides that:—

> Where any dog so seized wears a collar having inscribed thereon or attached thereto the address of any person or a number sufficient for identification, or the owner of the dog is known, the chief officer of police, or any person authorised by him in that behalf, shall serve on the owner, or on the person whose address is given on the collar, a notice in writing stating that the dog has been so seized, and will be liable to be sold or destroyed if not claimed within five clear days after the service of the notice.

Then authority is given to the police to so sell or destroy the dog, and where the owner is not known this may take place five days after the seizure. The Bill provides that the notice may be served personally, or by leaving it at the owner's house, or by post.

With regard to sheep worrying, it is provided that:—

> The owner of a dog shall be liable in damages for injury done to any cattle by that dog; and it shall not be necessary for the person seeking such damages to show a previous michievous propensity in the dog, or the owner's knowledge of such propensity, or to show that the injury was attributable to neglect on the part of the owner.

The expression "cattle" is to include horses, mules, asses, sheep, goats, and swine. If the damages claimed do not exceed £5, they may be recovered summarily.

The provisions for tracing the ownership of a dog are as follows:—"Where any such injury has been done by a dog, the occupier of any house or premises where the dog is permitted to live or remain at the time of the injury shall be presumed to be the owner of the dog," unless he can show that he was unaware of the dog's presence about the stables or out-houses. The Bill, with certain necessary variations in procedure, applies to the whole of the United Kingdom.—*N.B.A*

Obituary.

At Sunnyside, Heaton Norris, Stockport, on the 4th inst., Annie Young Langlands, beloved wife of Ben. Ferrie, M.R.C.V.S.

ACTION BY A VETERINARY SURGEON.

At Barnet County Court on the 19th inst., Judge Sir Alfred Martin, K.C., heard the case of "Overed v. Bridgwater," which raised a question of some interest to those who let horses out to graze. Mr. Wells (solicitor) appeared for the plaintiff; Mr. W. Valentine Ball for the defendant. The claim was made by Mr. J. E. Overed, F.R.C.V.S., to recover the sum of £11 11s. for professional attendance upon a mare belonging to the defendant, Mr. Benjamin Bridgwater. It appeared that in August, 1900, the defendant let the mare out to graze to a Mr. Nix, of Finchley, at a charge of 5s. per week. While under the care of Nix, the mare met with an accident to the fetlock. Acting, as he said, upon the instructions of the defendant's groom, Mr. Nix consulted the plaintiff, who pointed out that although she could do no more work in harness, the mare might be used for breeding purposes. The plaintiff also relied on a statement alleged to have been made by the defendant's son to the effect that his father would be glad to have the mare attended to, but neither the groom nor the son was called on behalf of the plaintiff. He did not send in his bill until March, 1902.

The defendant denied that he had ever given his groom or his son any authority to order in a veterinary surgeon. It was contended on his behalf that there was no evidence of ratification, and that the plaintiff was himself liable, as he had become responsible for the safety of the mare under his contract of agistment.

His Honour, in giving judgment, said that when a man went away from home and left his horses in charge of a groom, it was within the scope of the groom's authority to call in a veterinary surgeon when an accident occurred. In the case before him he believed that the plaintiff had been properly employed and that the story put forward on his behalf was correct. He gave judgment for the plaintiff with costs.—An application for leave to appeal was refused.—*The Times.*

ALLEGED BREACH OF WARRANTY IN A COW.

A farmer named William Cotterill, of Higher Sutton, brought an action against another farmer named Elijah Shoebotham, of Macclesfield Forest, in which he sought to recover the sum of £12 4s. for breach of warranty on the sale of a cow.

Mr. H. E. Smale, of the firm of Pattinson and Smale, represented the plaintiff, and Mr. A. Oldfield, of the firm of Daniel and Oldfield, for the defendant.

Mr. Smale stated that the claim was made up as follows: Price paid to defendant for a cow, £10 15s.; cost of keeping a cow for a week, 8s.; and veterinary surgeon's fee, £1 1s. On the 5th March the plaintiff went to the defendant's farm and saw there two cows, and agreed to buy them for £22 15s., £10 15s. being for the cow in respect of which the claim was made. At the time of sale defendant said the cows were alright, and he would warrant them to be straight and honest. The cow in question should have calved on the 28th March, but did not calve until the 8th April. On the 19th April the plaintiff told the defendant he did not think the cows were quite right, and not as warranted. Plaintiff also asked defendant to take them back or come up and see them. Defendant said he would not fetch them back. Plaintiff saw the defendant several times subsequently, and the latter agreed to allow him £2 off the other cow. On the 14th May his firm wrote to the defendant, telling him that the cow would be sold by auction, and the difference in the price charged to defendant. The cow should have been taken to the auction on the 19th May, but could not walk, and it was found dead the following

day. A veterinary surgeon had made a post-mortem examination, and found the cow died from tuberculosis, from which it must have suffered at least six or seven months.

The plaintiff in the witness box bore out Mr. Smale's evidence, and when cross-examined by Mr. Oldfield persisted in saying that defendant warranted the cows, although perhaps it was not a usual thing for farmers to warrant cows to each other.

In answer to His Honour, plaintiff said the calf was a small one, and he sold it to dealers.

His Honour: Though you knew the cow had died of tuberculosis:

Plaintiff: Yes,

Mr. Oldfield: Did you tell them?

Plaintiff: No; the calf was sold before I knew the cow had died of tuberculosis.

Norman Howe, M.R.C.V.S., West Bond Street, deposed that he was called to see the cow in question on the 14th May, and upon applying the tuberculin test found the animal was suffering from tuberculosis. He made a post-mortem examination on the 21st May and found the stomach and bowels of the cow were in a chronic state of tuberculosis.

By Mr. Oldfield: Cows usually developed tuberculosis quicker after calving. There was nothing wrong with the lungs.

Bowden Steele, farmer, Sutton, also gave evidence in support of plaintiff's claim.

Mr. Oldfield, for the defence, submitted that the transaction between the parties was a perfectly honest one, the defendant believing at that time that the cows were in a healthy condition. Notice was given to the defendant that the plaintiff's veterinary surgeon was conducting a post-mortem examination, and Mr. Wagstaffe, M.R.C.V.S., the defendant's veterinary surgeon, went up to the bone works to be present when the examination was made, and met Mr. Howe coming back at the time the appointment was made, Mr. Wagstaffe had made an examination, and only found a very slight sign of tuberculosis, and was of opinion that the cow had caught a chill whilst calving and had died from peritonitis.

Defendant, in the box, denied that he gave a warranty with the cows, but that he believed they were alright when he agreed to sell them.

By Mr. Smale: He told the plaintiff the cows were reared by him and were right and straight for anything he knew of.

Mr. Wagstaffe, M.R.C.V.S., expressed the opinion that the cow died of peritonitis, but admitted that he found slight signs of tuberculosis near the ribs, which might have been present four or five months.

His Honour found that the cow died of tuberculosis, and he was of opinion that the cow was affected when purchased by the plaintiff, but the question he had to decide was whether or not the defendant gave a warranty. It seemed to him that the defendant used words to the effect that he had reared the cows, and that so far as he knew the cattle were "straight and honest." This did not amount to a warranty, and he would give judgment for the defendant with costs.—*Macclesfield Times.*

CRUELTY AT TAUNTON—DISMISSED.

At Taunton County Petty Sessions Thomas Mullins, farmer, of Otterford, was summoned for working a horse while in an unfit condition.—P.C. Guppy stated that he saw the horse working in a hay collector at Otterford. It was going lame, and he examined the hoof and found it very bad. He had previously cautioned defendant about the horse.

William Haythorn, inspector of the Royal Society for the Prevention of Cruelty to Animals, said he also examined the animal, found it in a very poor condition, and very lame in the hind fetlock, which was enlarged and very hot. He told defendant the horse was unfit for work, and he replied that he knew it was, adding that he would send it to the kennels. The horse had since been destroyed.

Dr. E. Liddon, one of the magistrates, addressing the inspector, said: When you came to me to take out the summons you said the horse had got ringbone; now you say it was something else. You evidently do not understand what you are talking about. You should have gone to a veterinary surgeon as I advised you.

The Bench dismissed the case, Mr. Jeffreys, another magistrate, remarking, "You inspectors when you bring these cases into court ought to know what you are talking about, or else get a veterinary surgeon to advise you."—The Inspector: I cannot do that without instructions.

Mr. Goldsmith, who appeared for defendant, said his client had lost a valuable horse through having this animal killed. The Magistrates' Clerk stated that it was usual at that Court to have a veterinary surgeon in disputed cases.—*West Somerset Free Press.*

Why the Horse Bolted.

In Edinburgh Police Court on August 15th one of the legal fraternity set out to explain why a horse bolted from a street corner. Two boys, he said, spat in the horse's face, and the animal being well bred was considerably annoyed and bolted. The horse was apparently anxious to seek consolation in drink, and with this end in view upset a lorry containing a large number of bottles of aerated water and beer. Bailie Waterston sympathised with the horse, and expressed the opinion that a horse would be as much annoyed as a man if any one spat in his face. The curious thing was that the same lawyer put forward the same excuse in the very next case. A woman assaulted her neighbour because the latter spat on the face. A ripple of laughter ran over the Court, and the Bailie innocently inquired if it was a "washing quarrel."—*Dundee Advertiser.*

ARMY VETERINARY DEPARTMENT.

War Office, Pall Mall, Aug. 15.

Vet.-Major C. Rutherford, F.R.C.V.S., C.M.G., to be Vet.-Lieut.-Colonel *vice* G. Durrant placed on retired pay.

Communications, Books, and Papers received.—Messrs. E. Wallis Hoare, G. Mayall. F.E.P.

Report, Bombay Veterinary College. 1901-2. Preliminary Programme Congress of Sanitary Institute, Cork Weekly News.

News Cuttings:—A convenient method is to send the page of the newspaper containing the marked paragraph in an unsealed envelope. The postage is ½d.

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers containing facts of interest.

Original articles and reports should be written on one side only of the paper and authenticated by the names and addresses of the writers, not necessarily for publication.

Communications for the Editor to be addressed 20 Fulham Road, S.W.